

IN THE CLAIMS

1. (Original) A canister purge valve for regulating fuel vapor flow between a fuel vapor collection canister and an intake manifold of an internal combustion engine, the canister purge valve comprising:

a body having a wall defining a passage between a first port and a second port, the first port adapted for fuel vapor communication with the fuel vapor collection canister, and the second port adapted for fuel vapor communication with the intake manifold of the internal combustion engine;

an elastomeric actuator at least partially disposed in the passage;

wherein the elastomeric actuator includes a first end, a second end spaced from the first end along a central axis, and a sealing surface between the first end and the second end, the sealing surface having a first diameter at a first portion and a second diameter at a second portion, the second diameter being wider than the first diameter, the elastomeric actuator being deformable between a first configuration that engages the wall to prohibit fuel vapor flow through the passage, and a second configuration spaced from the wall to permit fuel vapor flow through the passage.

2. (Original) The canister purge valve of claim 1, wherein the first end, the second end, and the sealing surface of the elastomeric actuator define a chamber, the chamber having a first length along the central axis in the first configuration, the chamber having a second length along the central axis in the second configuration, the first length being shorter than the second length.

3. (Original) The canister purge valve of claim 2, wherein the sealing surface contracts radially inward toward the central axis as the elastomeric actuator is deformed from the first configuration to the second configuration.

4. (Original) The canister purge valve of claim 1, further comprising:
a stator;

an electromagnetic coil; and
an armature integrally formed with the elastomeric actuator proximate the first end.

5. (Original) The canister purge valve of claim 4,
wherein the second end of the elastomeric actuator is fixed with respect to the body; and
wherein the elastomeric actuator is deformable between the first configuration and the
second configuration by energizing the electromagnetic coil to magnetically attract the armature
toward the stator and deform the elastomeric actuator in the direction of the central axis.

6. (Original) The canister purge valve of claim 5,
wherein a stiffness of the elastomeric actuator increases as an ambient temperature
decreases; and
wherein the electromagnetic coil is energized to compensate for the increased stiffness.

7. (Currently Amended) A valve for regulating fluid flow, comprising:
a body having a wall defining a passage between a first port and a second port, the wall
having a portion disposed around, and parallel to, a central axis; and
an elastomeric actuator at least partially disposed in the passage;
wherein the elastomeric actuator includes a first end, a second end spaced from the first
end along the central axis, and a sealing surface between the first end and the second end, the
sealing surface having a first diameter at a first portion and a second diameter at a second
portion, the second diameter being wider than the first diameter, the elastomeric actuator being
deformable between a first configuration that engages the wall to prohibit fluid flow through the
passage, and a second configuration spaced from the wall to permit fluid flow through the
passage.

8. (Original) A method of regulating fuel vapor flow between a fuel vapor collection
canister and an intake manifold of an internal combustion engine, utilizing a canister purge
valve, the valve including a body having a wall defining a passage extending between a first port
and a second port, the first port adapted for fuel vapor communication with the fuel vapor

collection canister, and the second port adapted for fuel vapor communication with the intake manifold of the internal combustion engine, the valve including an elastomeric actuator at least partially disposed in the passage, the elastomeric actuator having a first end, a second end spaced from the first end along a central axis, and a sealing surface between the first end and the second end, the sealing surface having a first diameter at a first portion and a second diameter at a second portion, the second diameter being wider than the first diameter, the method comprising:

engaging the wall with the elastomeric actuator to prohibit fuel vapor flow through the passage; and

disengaging the elastomeric actuator from the wall to permit fuel vapor flow through the passage.

9. (Original) The method of claim 8, wherein the disengaging the elastomeric actuator includes energizing an electromagnetic coil to magnetically attract an armature toward a stator in the direction of the central axis.

10. (Original) The method of claim 9, further comprising energizing the electromagnetic coil to compensate for an increased stiffness of the elastomeric actuator as an ambient temperature decreases.